

EST. SEGAWA & CO. Your Ref: 209211 US -2756-83-0  
Our Ref: F070805



DOCKET NO.: 209211US0

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

IN RE APPLICATION OF:

YUKIHIKO SHIRAKAWA

:

: EXAMINER: HARPER, H.

SERIAL NO.: 09/866,732

:

FILED: MAY 30, 2001

: GROUP ART UNIT: 2879

FOR: THIN FILM EL DEVICE AND PREPARATION METHOD

**DECLARATION UNDER 37 C.F.R. §1.132**

COMMISSIONER FOR PATENTS  
ALEXANDRIA, VIRGINIA 22313

SIR:

Now comes Yukihiko SHIRAKAWA who deposes and states:

1. That I am a graduate of Department of Electrical Engineering, Faculty of Engineering, Kyoto University and received a bachelor's degree in the year 1983.
2. That I have been employed by TDK Corporation, for 20 years as a researcher in the field of Dielectric Thin-Film and Development of Inorganic EL Displays.
3. That I understand the English language or, at least, that the contents of the Declaration were made clear to me prior to executing the same.
4. That the following experiment was carried out by me or under my direct supervision and control.

**Experiment**

A dielectric layer (a) was compared to a dielectric layer (b).

Dielectric layer (a) was prepared by a sputtering process as described at page 14, line 36 to page 15, line 20 of the specification. Specifically, the sample was obtained by a

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six-hour sputtering at 2Pa of argon gas and RF300W using a RF magnetron sputtering system wherein a BaTiO<sub>3</sub> ceramic sintered member was used as a target. An SEM photograph of the fracture cross-section of the sample was obtained and is shown in Figure 5 as well as the attached Figure labeled "Dielectric layer formed by sputtering process."

**Dielectric layer (b)** was prepared by the **MOD process** according to the present invention as described in Example 1, at page 20, lines 4-34. The layer were stacked by repeating the sol-gel coating method of Example 1. An SEM photograph of the fracture cross-section of the resulting dielectric layer was obtained and is shown in the attached Figure labeled "Dielectric layer formed by MOD process." Here, the MOD film comprises four layers, each 0.7  $\mu$ m thick.

#### 5. Result

As can be seen from the SEM photographs, each layer of the MOD film comprises a collection of fine particles. On the other hand, the sputtered film presents a rupture section suffering inter-particle destruction with undetectable particle size.

6. The undersigned petitioner declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of this application or any patent issuing thereon.

7. Further deponent saith not.

Shirakawa Yukihiro  
Signature Yukihiro SHIRAKAWA

July 01, 2003  
Date